UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/963,270	09/24/2001	Alan H. Karp	10980982 -1	8394

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EXAMINER
FOWLKES, ANDRE R

ART UNIT	PAPER NUMBER
2122	

DATE MAILED: 07/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>1/17/02</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-15</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-15</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1.   Claims 1-15 are pending.

Claim Rejections - 35 USC § 102

2.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

3.   The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act

of 1999 (AIPA) and the Intellectual Property and High Technology Technical

Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting

directly or indirectly from an international application filed before November 29, 2000.

Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior

to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

4.   Claims 1-15 are rejected under 35 U.S.C. 102(e) as being anticipated by Levine

et al., (Levine), U.S. Patent No. 6,134,710.

As per claim 1, Levine discloses **a method for providing hint instructions to a**

processor (col. 1:9-15, "the present invention relates to monitoring the performance of

the operation of a computer processing system when executing an application program,

... and modifying the object code (by inserting hint instructions, e.g. pre-fetch

instructions), on-line, in order to improve the operation of the application program in the

processing system"), **comprising the steps of:**

- generating a hint instruction in response to a set of object code to be

executed by the processor (col. 2:28-38, "the present invention ... optimizes an

application program by profiling the program to identify ... (instructions in) object code

that result in long table walks or long cache misses, ... and (generating, then) inserting

(hint) instructions into the object code that minimize the effects of long table walks and

long cache misses by preloading or 'touching' an instruction or data"),

- inserting a break instruction into the object code such that the break

instruction causes the processor to obtain and execute the hint instruction (col.

3:48-51, "setting an instruction address breakpoint register to signal a first interrupt, ...

inserting a preload (i.e. hint) instruction").

As per claim 2, the rejection of claim 1 is incorporated, and further, Levine

discloses **inserting the break instruction in place of a selected instruction in the**

object code (col. 3:48-51, "setting an instruction address breakpoint register to signal a

first interrupt (in place of a selected instruction in the object code, and then), ... inserting

a preload instruction").

As per claim 3, the rejection of claim 2 is incorporated, and further, Levine discloses **that the break instruction causes the processor to obtain and execute the hint code** (col. 3:48-51, "setting an instruction address breakpoint register to signal a first interrupt, (then), ... inserting (and executing) a preload instruction").

As per claim 4, the rejection of claim 2 is incorporated, and further, Levine discloses **loading the hint instruction into a hint register such that the break instruction causes the processor to obtain the hint instruction from the hint register and execute the hint instruction** (col. 2:40, "(hint instructions may be stored in) an optimized change file (and stored in a register, to be executed as a result of the break instruction)", and fig. 1 item 66, and associated text (e.g. col. 6:55-7:50), shows the "registers" which are loaded with and used to obtain hint instructions.

As per claim 5, the rejection of claim 4 is incorporated, and further, Levine discloses **loading the selected instruction into the hint register such that the break instruction causes the processor to obtain the selected instruction from the hint register and execute the selected instruction.** (col. 2:40, "(selected instructions may be stored in) an optimized change file (and stored in a register, to be executed as a result of the break instruction)", and fig. 1 item 66, and associated text (e.g. col. 6:55-7:50), shows the "registers" which are loaded with and used to obtain selected instructions.

As per claim 6, the rejection of claim 4 is incorporated, and further, Levine

discloses **loading an address into the hint register such that the break instruction**

causes the processor to load the hint register using the address (col. 2:40,

"(addresses may be stored in) an optimized change file (and stored in a register, to be

loaded as a result of the break instruction)", and fig. 1, item 66, and associated text (e.g.

col. 6:55-7:50) show the "registers".

As per claim 7, the rejection of claim 1 is incorporated, and further, Levine

discloses **determining the hint instruction in response to a micro-architecture of**

the processor (col. 1:9-15, "the present invention relates to monitoring the

performance of the operation of a computer processing system, (composed of a specific

micro-architecture), when executing an application program, ... and modifying the object

code (by inserting hint instructions, e.g. pre-fetch instructions), on-line, in order to

improve the operation of the application program in the processing system").

As per claim 8, system version of the claimed method discussed above, in claim

1, wherein all claimed limitations also have been addressed above, and such a product

is deemed to be inherent in the Levine Adaptive method and system to minimize the

effect of long cache missed, otherwise it would be inoperative.

As per claims 9-15, Levine also discloses such claimed limitations as addressed

in claims 2-7, above.

Conclusion

5.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andre R. Fowlkes whose telephone number is (703)305-8889. The examiner can normally be reached on Monday - Friday, 8:00am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan Q. Dam can be reached on (703)305-4552. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ARF

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PRIMARY EXAMINER